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2013 Crooked Creek Reservoir Vegetation Control Plan

LDWF, Inland Fisheries

General Information

Crooked Creek is a 400 acre impoundment just five miles northwest of Pine Prairie, Louisiana in Evangeline parish. Crooked Creek Park Reservoir was cleared in 1972 and the levees completed in 1974 by the Evangeline Parish police Jury. This waterbody is surrounded by small rolling hills surrounded by pine forest.

There is a 2,150-foot spillway installed, with a width of 200-ft, and is set at 21.0 MSL on the west levee with a pipe structure in front of it for drawdown capabilities.

(Good condition)

There is a 2,150-foot spillway with 1 four-foot gate (**see picture below**).

Surface acre range - 400 acres at pool stage

Average depth – 3-4 feet

Watershed ratio – 4:1

Drawdown potential of structure - Gate open completely can drop the lake 2 inches per day and can be drawn down a total of 4 feet.

Evangeline Parish Police Jury owns and operates the park and the lake.

(337) 363 – 5651

Recommendations from LDWF are passed to the Evangeline Parish Police Jury.

Louisiana Department of Wildlife & Fisheries - Opelousas, LA (337) 948–0255

DRAWDOWN HISTORY

There have been very few drawdowns conducted on Crooked Creek. In 1995 a drawdown was implemented to reduce native aquatic plants such as coontail and fanwort. Then in 1999 and 2000 the water levels were reduced due to the drought which dropped the lake 3 feet. The next drawdown was in 2004 to reduce vegetation (Hydrilla) and dredge shallow areas. All drawdowns were recommended and conducted by the EPPJ.

Drawdown Dates

There have been a total of 4 drawdowns for control of submerged aquatic vegetation. Drawdowns were all conducted from September – December (Fall/Winter).

DRAWDOWN HISTORY				
Date Opened	Date Closed	Purpose	Results	Issues
Fall 1995	Winter 1995	Control native submerged vegetation	Fair control	Lake lowered 2-3 ft.
Fall 1999	Winter 2000	Control native submerged vegetation	Fair control	Lake lowered 3 ft.
September 2004	October 2004	Control hydrilla submerged vegetation	Fair control	Lake lowered 2-3 ft.

As the table above shows, drawdowns have been used to manage aquatic vegetation in Crooked Creek. Native vegetation, such as coontail and fanwort, was the dominant plant that was being managed. In 2002 hydrilla was discovered. In 2008 the Evangeline Parish Police Jury stocked triploid grass carp that was used to control the spread of the invasive species, hydrilla. Also, in 2011 Louisiana Department of Wildlife & Fisheries stocked 60 adult (2years old) TGC to help with the spread of Hydrilla.

The lake is mainly used for recreational activities (fishing, boating, skiing & hunting).

Complaints are few and include submerged vegetation issues such as hydrilla in the backs of coves that hinders fishing and hunting, and watershield near the pier. Most of the complaints are directed to the Evangeline Parish Police Jury (EPPJ).

Aquatic Vegetation Status:

2011

The main issue in 2011 was the abundance of hydrilla throughout the lake. It had become a serious problem for most boating activities. Hydrilla covered approximately 75% of the lake. EPPJ stocked 500 Triploid Grass Carp in 2008 and LDWF stocked 60 adult triploid grass carp in 2011 to aid in the control of this plant.

2012

As of September of 2012, water shield (40%), fanwort (40%) and coontail (20%) cover approximately 180 acres mainly on the north and northeast end of the lake. Other plants include American lotus (15 acres), alligator weed (10 acres), water hyacinth (5 acres) and duckweed (8 acres) which make up a small amount of emergent and floating plant coverage. There have been no efforts to re-establish these plant species.

Hydrilla may continue to be a problem if no there are no additional steps taken to control it. Hydrilla is present throughout half of the lake (200 acres). Hydrilla amounts seem to have decreased in the center of the lake which may relate to the grass carp stocking. Additional stocking of triploid grass carp will hinder the growth of this plant and reduce it to manageable levels. Other plants such as duckweed, lotus, water hyacinth, etc will be control as needed using foliar herbicide applications.

Plant growth projections for 2013:

Hydrilla – 200 acres widely scattered over the lake.

Watershield, Coontail and Fanwort – 150 acres throughout the lake

American lotus, Alligator weed, water hyacinth and duckweed – light coverage (10 acres) throughout the lake

Limitations:

Shallow water on the north end of the lake (small coves) is hard for spray boats to access and control floating vegetation.

Crooked Creek is relatively small and is visited by many users groups, such as recreational fishermen, skiers, hunters and boaters. Our spray crews have to be careful while applying herbicide and often begin work very early in the morning so not to interfere with these user groups. Also, duck hunting has limited our sprayers' ability to treat vegetation during fall season.

Past Control Measures:

Drawdowns have been conducted to control submerged aquatic vegetation such as coontail and hydrilla. Between 2008 and 2010, spray crews treated 143 acres to control aquatic plants. Herbicides used were: Aquastar at 45 gallons of glyphosate covering 60 acres of water shield, 5 gallons of 2,4-D at covering 10 acres of water hyacinth and lotus, and 61 gallons of diquat covering 80.6 acres of water shield and duckweed. Other control efforts included the introduction of triploid grass carp which were stocked in 2008 and 2011 to control hydrilla growth.

In 2011, 5 gallons of Aquamaster were applied to 7 acres of water-shield.

In 2012 no herbicides were applied in Crooked Creek.

Recommendations:

Herbicide applications will be made on nuisance plants, such as water hyacinth, lotus, water shield and duckweed in areas that are used by the public. To control water hyacinth and American lotus, 2,4-D will be applied at a rate of 0.5 gallons per acre and diquat and glyphosate will be used at a rate of 0.75 gallons per acre to control water shield and duckweed. Appropriate non-ionic surfactants will be used to improve the effectiveness of these treatments. These herbicides will be used as needed.

Triploid Grass Carp stocked at a rate of 8 per vegetative acre will help retard the growth of hydrilla that has spread throughout the lake. A total of 2,400 carp ranging from 8-10- inches in length should be stocked in the months of January or February of 2014. The owner of the lake, Evangeline Parish Police Jury, will purchase these fish. If needed, LDWF will assist in releasing these carp throughout the lake. Corrugated fence has been placed within the control structure to prevent carp from escaping. This is a cost effective way for the Evangeline Parish Police Jury to control Hydrilla without detriment to game fish habitat throughout the lake.

These plans will be presented to waterbody authorities as soon as they are approved by LDWF administration. The Crooked Creek Management Plan is not completed.

Type map

October 2, 2012 Vegetation Typemap of Crooked Creek

Crooked Creek continues to have a heavy infestation of water shield (*Brasenia schreberi*) with a thick mat of this plant covering the entire north end of the lake just north of the public swimming area of the lake. Patches of water shield were found throughout the lake primarily along the bank however these patches were small and not continuous as are the mats located on the north end of the lake. This north end location is shallow at an average depth of 4 feet. Within this accumulation of water shield is a very thick growth of fanwort (*Cabomba caroliniana*). Moderate amounts of hydrilla (*Hydrilla verticillata*) were found mixed with the fanwort as well as small amounts of coontail (*Ceratophyllum demersum*). A noticeable decrease in the amount of hydrilla found within the lake was observed. The cove across the lake from the boatlaunch was only slightly marked with hydrilla. The same was true of the boatlaunch and spillway with only a small patch of hydrilla seen adjacent to the boatlaunch and in corners of the spillway. Shoreline amounts of hydrilla were thin. In spring of 2012, 500 grass carp were stocked into the lake. On the shallow shoreline locations found around the lake were growing light amounts of duck potato (*Sagittaria lancifolia*), flat sedge (*Cyperus odoratus*), and water primrose (*Ludwigia* spp.). **No floating vegetation was observed. No giant salvinia (*Salvinia molesta*) observed.**

Below are pictures of Crooked Creek on Oct. 2 2012.



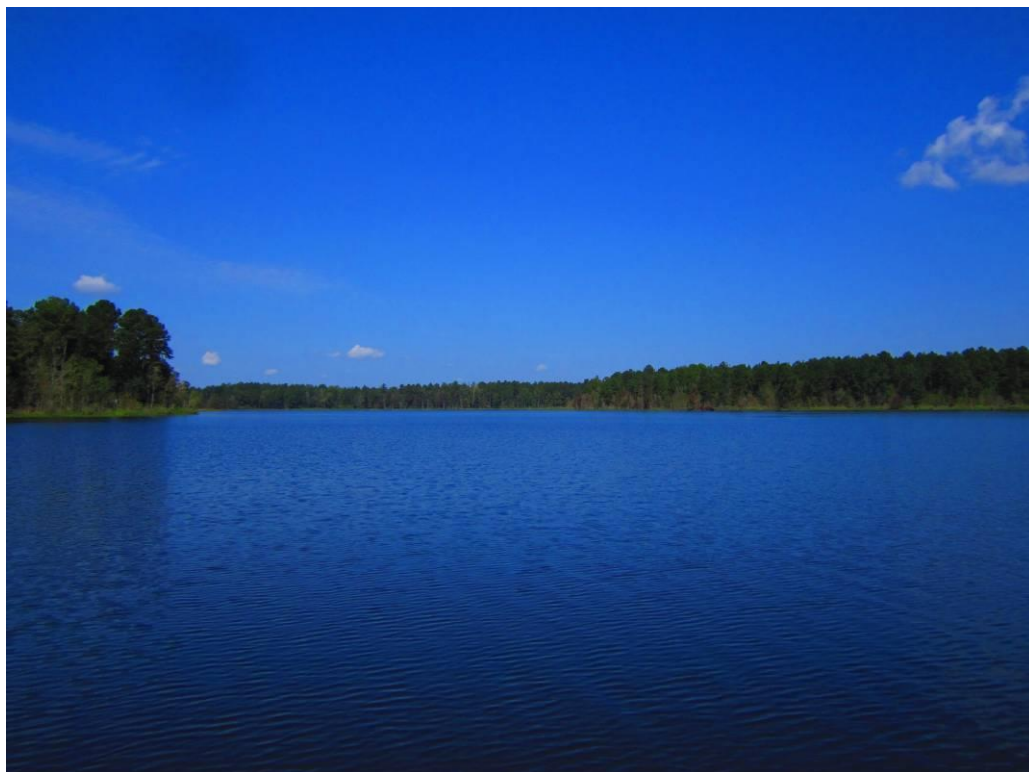
Water shield on north end of Crooked Creek Oct. 2 2012



Crooked Creek north end looking left from above picture.



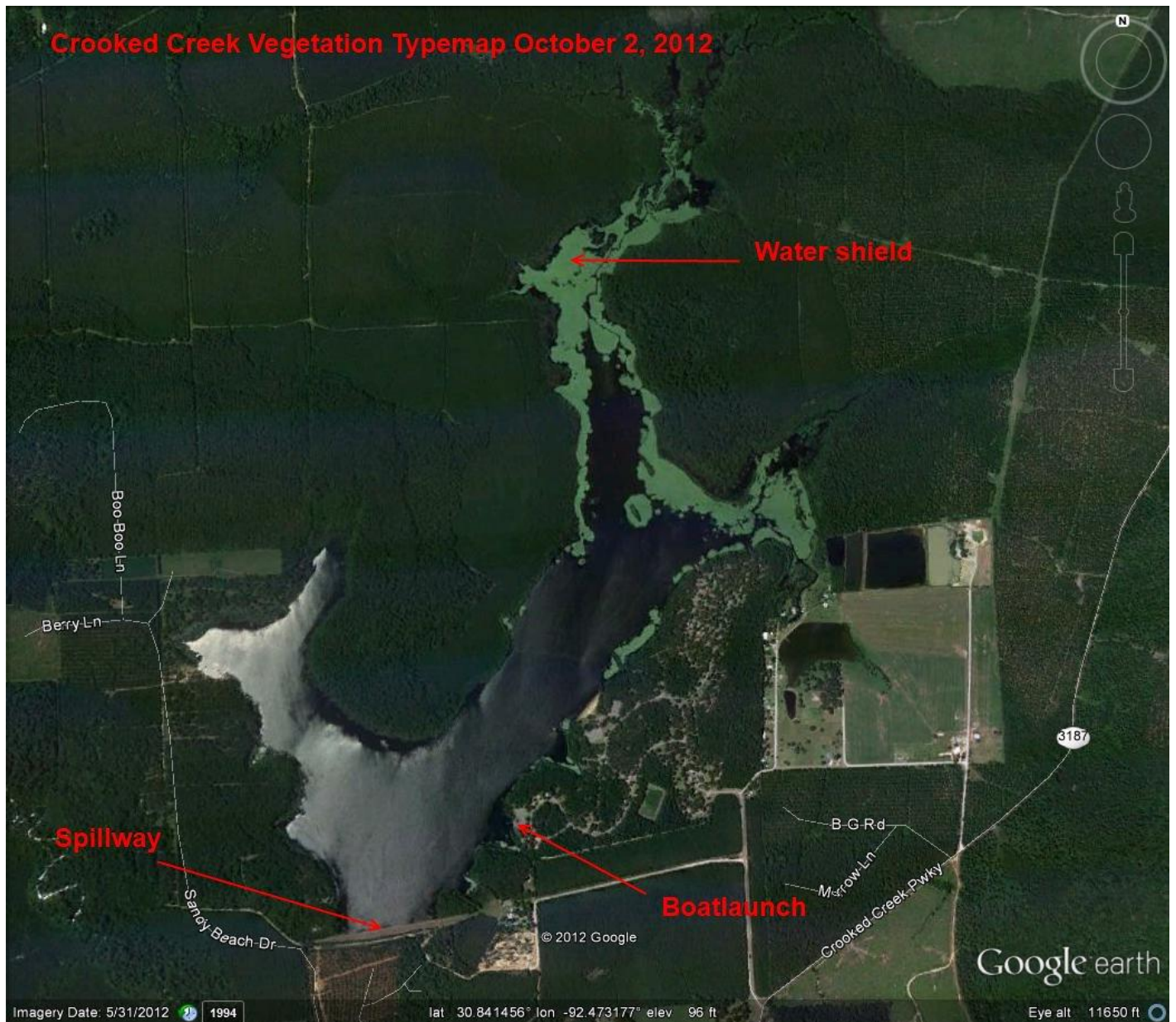
Submerged vegetation found in north end of crooked creek.



Crooked creek Oct. 2 2012 from boatlaunch.



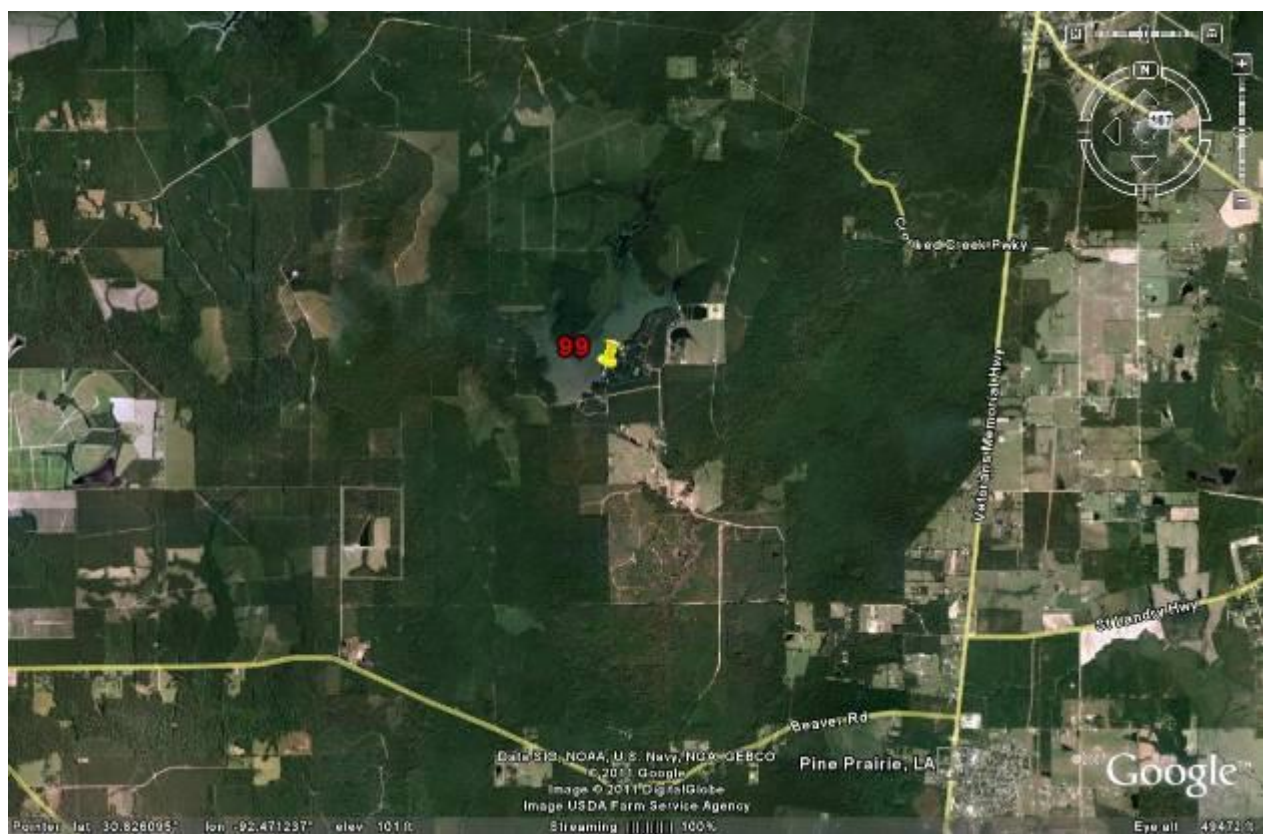
Crooked creek Oct. 2 2012 looking towards boatlaunch.



Crooked creek. Green mat on north end is water shield with heavy amounts of fanwort.

Date	Temp	SpCond	Salinity	Depth	pH	Turbidity+	Chlorophyl	d.o. percent	d.o. mg/l	location
10/02/12	24.62	0.793	0.39	0.181	9.43	5.3	11.7	79.50	6.60	mid lake
10/02/12	24.39	0.974	0.48	13.162	7.29	1189.8	27.8	12.00	1.00	mid lake
10/02/12	26.43	0.922	0.45	0.273	7.39	5.7	8.7	80.90	6.49	north flats

Crooked Creek water qualities, YSI 6600 sonde.



Crooked Creek Lake

Spillway and control structure

